International Journal of Infectious Diseases 51 (2016) 103–104

Contents lists available at ScienceDirect

International Journal of Infectious Diseases

journal homepage: www.elsevier.com/locate/ijid

Medical Imagery

Oculomotor nerve palsy in invasive intracranial aspergillosis

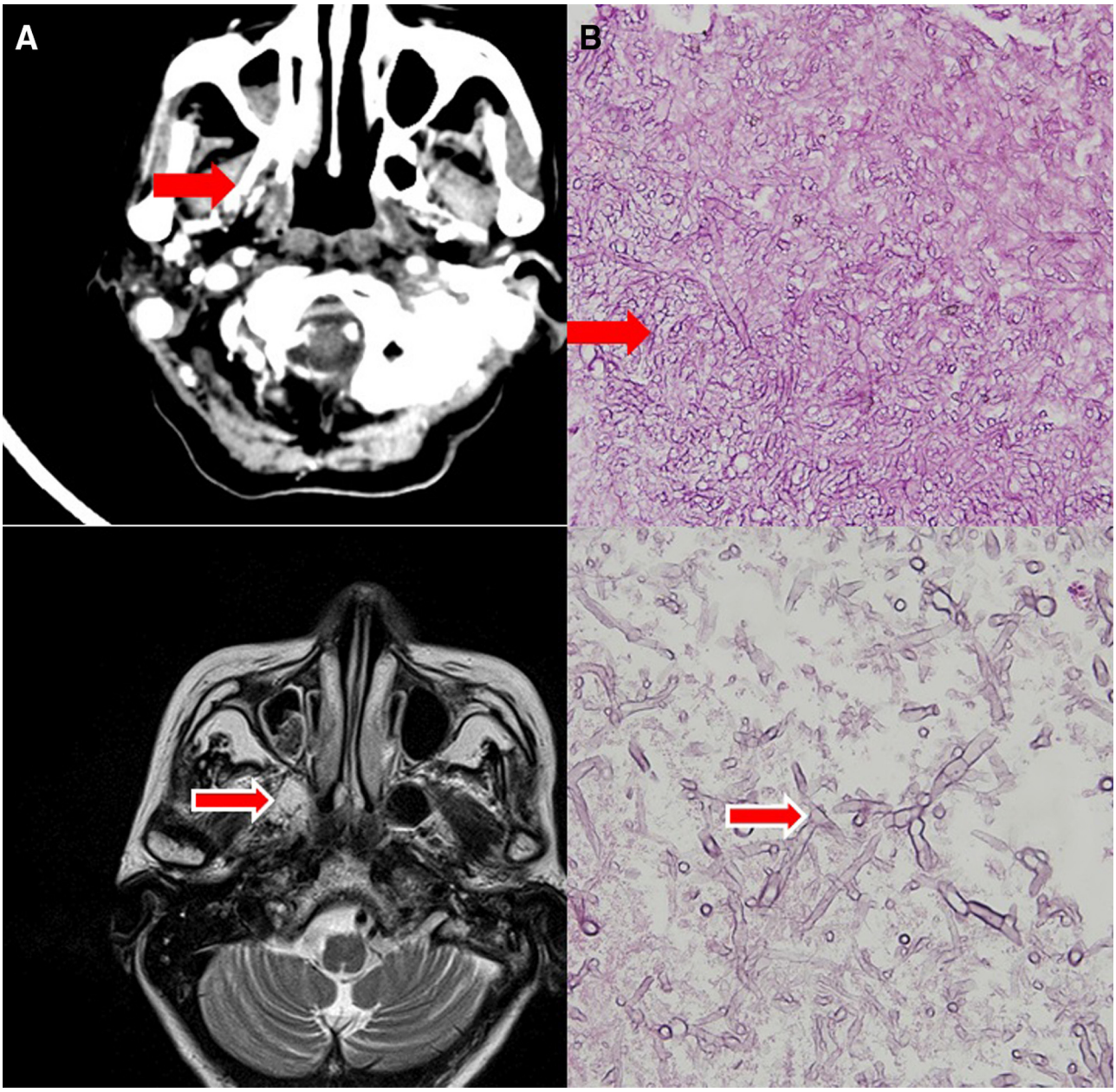

Figure 1. A Contrast-enhanced computed tomography scan of the brain demonstrating abnormal contrast enhancement of the maxillary sinus, cavernous sinus, and superior orbital apex on the axial image (red arrow). Axial T2-weighted contrast-enhanced magnetic resonance imaging of the brain showing abnormal contrast enhancement of the maxillary sinus, cavernous sinus, and superior orbital apex, with skull base bony destruction (red–white arrow). (B) Photomicrograph revealing a fungal ball with numerous branching hyphae (hematoxylin–eosin stain, ×100, red arrow) and characteristic septate fungal hyphae of an *Aspergillus* species, and hyphae branching dichotomously at a 45-degree angle (hematoxylin–eosin stain, ×400, red–white arrow).

http://dx.doi.org/10.1016/j.ijid.2016.09.004

The patient was a 70-year-old diabetic Taiwanese woman, with a past medical history of otitis media status post surgery performed 2 years prior. She presented to the emergency department with a progression of headache, double vision, and ptosis of the right eye occurring over the course of 1 month, following an inability to perform lateral gaze. A neurological examination demonstrated palsy of intracranial nerves III, IV, and IV of the right eye. A computed tomography scan and magnetic resonance imaging of the brain showed abnormal contrast enhancement of the right maxillary sinus, cavernous sinus, and superior orbital apex, along with skull base bony destruction (Figure 1A). A biopsy of the right paranasal sinus was performed by endoscopic sinus surgery, and photomicrographs revealed a fungal ball with numerous characteristic septate fungal hyphae of an *Aspergillus* species and hyphae branched dichotomously at a 45-degree angle (Figure 1B). Treatment with intravenous amphotericin B (50 mg daily) was prescribed for 1 week; this was then changed to voriconazole (200 mg twice daily) for 6 months, in the outpatient department.

Invasive aspergillosis has been shown to occur in 10.7% of patients with acute myeloid leukemia receiving induction chemotherapy.[1] Invasive aspergillosis of the intracranial nerve system is a difficult diagnostic challenge and has a high mortality rate, especially in those in an immunocompromised condition. Sinusitis, vascular narrowing or obstruction, and bony destruction are radiological signs of invasive fungal infection. A definite diagnosis of aspergillosis is based on the histopathological characteristics of the tissue involved demonstrating a fungal ball with aggregates of spores and hyphae with 45-degree branching.[2–4] Surgical resection of the focal lesion remains the cornerstone of management, followed by systemic antifungal medications.[4,5]

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Consent: Written informed consent was obtained from the patient for publication of this case report and all accompanying images.

Conflict of interest: No competing interest declared.

References

1. Tang JL, Kung HC, Lei WC, Yao M, Wu UI, Hsu SC, et al. High incidences of invasive fungal infections in acute myeloid leukemia patients receiving induction chemotherapy without systemic antifungal prophylaxis: a prospective observational study in Taiwan. *PLoS One* 2015;**10**:e0128410.
2. Saini J, Gupta AK, Jolapara MB, Chatterjee S, Pendharkar HS, Kesavadas C, et al. Imaging findings in intracranial Aspergillus infection in immunocompetent patients. *World Neurosurg* 2010;**74**:661–70.
3. Boutarbouch M, Arkha Y, El Ouahabi A, Derraz S, El Khamlichi A. Sphenoid sinus aspergillosis simulating pituitary tumor in immunocompetent patient. *J Clin Neurosci* 2009;**16**:840–1.
4. Shamim MS, Siddiqui AA, Enam SA, Shah AA, Jooma R, Anwar S. Craniocerebral aspergillosis in immunocompetent hosts: surgical perspective. *Neurol India* 2007;**55**:274–81.
5. Mohindra S, Mukherjee KK, Chhabra R, Gupta SK, Gupta R, Khosla VK. Invasive intracranial aspergillosis: the management dilemmas. *Surg Neurol* 2008;**69**:496–505. discussion 505.

Shih-Che Huang[a]
Sung-Yuan Hu[a,b,c,d,*]
Jin-An Huang[e]
Chen-Hui Lee[f]
[a]*Department of Emergency Medicine, Taichung Veterans General Hospital, 1650 Taiwan Boulevard Sect. 4, Taichung 40705, Taiwan*
[b]*School of Medicine, Chung Shan Medical University, Taichung, Taiwan*
[c]*Institute of Medicine, Chung Shan Medical University, Taichung, Taiwan*
[d]*Department of Nursing, College of Health, National Taichung University of Science and Technology, Taichung, Taiwan*
[e]*Center of Neurology, Taichung Veterans General Hospital, Taichung, Taiwan*
[f]*Department of Pathology and Laboratory Medicine, Taichung Veterans General Hospital, Taichung, Taiwan*

[*]Corresponding author. Tel.: +886 4 2359 2525 ext. 3670; fax: +886 4 2359 4065
E-mail address: song9168@pie.com.tw (S-Y. Hu)

Received 29 July 2016

Corresponding Editor: Eskild Petersen, Aarhus, Denmark